

CLAIMS

1. System for cooling an inner wall (7) of a thermal system comprising a double wall (9), said inner wall being subjected to temperatures greater than or equal to its physical capacity, said system comprising a network of tubes (1) independent of said thermal system to be cooled, said tubes (1) containing cooling water (4) circulating under pressure and being equipped with nozzles (3) provided for atomizing the water and spraying it in full cones (5) against said inner wall (7) and controlled by adjustable-flow cocks (2), characterized in that said network of tubes is an integral part of the outer wall of the thermal system to be cooled and in that it further comprises means for maintaining the water spraying zone delimited by said respective inner and outer walls under negative pressure.
2. System according to claim 1, characterized in that the adjustable-flow cocks (2) pass through the tubes (1), said cocks terminating in said nozzles (3).
3. System according to one of the claims 1 or 2, characterized in that tubes are installed on the inside surface of the outer wall (9).
4. System according to one of the preceding claims, characterized in that tubes are installed on the outside surface of the outer wall (9).
5. System according to one of the preceding claims, characterized in that the cooling water (4) circulating in the network of tubes (1) is stabilized with respect to mineral content and pH.
6. System according to one of the preceding claims, characterized in that the network of tubes is in a closed circuit and the cooling water (4) is regenerated continuously.
7. System according to one of the preceding claims, characterized in that the cooling water (4) contained in the network of tubes (1) is at a temperature less than or equal to 60°C.

8. System according to one of the preceding claims, characterized in that the zone (6) in which the water is sprayed is maintained under negative pressure by a system (10) that extracts the steam produced.

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9. System according to claim 8, characterized in that the steam-extracting system (10) is intended to compress said steam and inject it into a dedicated exchanger unit so that said steam produced then compressed acquires the temperature and pressure suitable for power co-generation.

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10. System according to one of the preceding claims, characterized in that it further comprises a detecting system (11) composed of contact sensors which permit continuous monitoring of the wall temperature that is to be regulated.

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11. System according to one of the preceding claims, characterized in that it comprises cocks providing micrometric adjustment.

12. System according to one of the preceding claims, characterized in that it comprises cocks with computer-controlled automatic operation.

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13. Method of cooling an inner wall of a thermal system comprising a double wall, employed in a cooling system according to any one of the preceding claims, said inner wall being subjected to temperatures greater than or equal to its physical capacity, in which cooling water circulating under pressure is contained in a network of tubes independent of said thermal system to be cooled, said tubes containing and being equipped with nozzles provided for atomizing the water and spraying it in full cones against said inner wall and controlled by adjustable-flow cocks, characterized in that it comprises maintaining the water-spraying zone delimited by said respective inner and outer walls under negative pressure, the network of tubes being an integral part of the outer wall of the thermal system to be cooled.

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